

Amendments to the Specification:

The amendments given below have been numbered for ease of reference to them in the Remarks section of this Reply. The numbers begin at 24, so that they run consecutively with the amendments numbered 1-23 in the Reply to the first Office Action.

24. Please cancel the amendment requested in paragraph 10 of the previous Reply.

25. Please replace the paragraph beginning on page 2, line 21 (page 2, line 22, of the published PCT specification), with the words "The invention accordingly..." and ending on page 3, line 8 (page 3, line 9, of published PCT specification), with the words "... the uncrosslinked layers.", with the following amended paragraph.

In a first aspect, this invention accordingly provides an insulated electrical wire comprising

1) a metallic conductor, and

2) having insulation comprising

(i) at least a first layer which is composed of a first polymeric composition comprising a first polymeric component of a polyolefin-based material

comprising, of which at least 20%, preferably at least 40%, more preferably at least 60% or preferably at least 80%, by weight, based on the weight of the first polymeric component, (or, in some embodiments, based on the weight of the

whole material composition) of a carbonyl-containing polymer (which may be a homopolymer or copolymer or, including terpolymer) having a non-aromatic

backbone and comprising, of which polymer the or at least one constituent

monomer is repeating units derived from a monomer which (a) can be copolymerized with an olefinic monomer and (b) contains a carboxylic acid ester group, preferably an acrylate or acetate, especially an alkyl acrylate (preferably

methyl acrylate, ethyl acrylate, propyl acrylate or butyl acrylate), the units derived from said monomer itself constituting at least 5%, preferably at least 9%, more preferably at least 15% , for example 15 to 28%, by weight of the carbonyl-

~~containing polymer said co-, or ter-polymer when used, and the remainder any other repeating units of the carbonyl-containing polymer said co-, or ter-polymer preferably being derived from an olefinic monomer, preferably ethylene; and in contact with;~~

5 (ii) ~~at least a second layer which is in direct contact with the first layer at an interface, and which is composed of a second polymeric composition comprising a second polymeric component comprising of a material containing at least 10%, more preferably at least 50%, particularly or at least 90%, for example substantially 100%, by weight based on the whole material weight of the second~~
10 ~~composition, of polyvinylidene fluoride (PVDF) [,] or especially preferably a copolymer based on VDF with a partially or fully fluorinated co-monomer, most preferably a copolymer of VDF and a vinylidene chloride (VDF) copolymer consisting essentially of~~

(a) ~~repeating units derived from vinylidene fluoride, and~~
15 (b) ~~repeating units derived from a partially or fully fluorinated co-monomer, preferably hexafluoropropylene (HFP);~~

~~the first layer being positioned between the conductor and the second layer.~~

~~Preferably, the wherein the said layers (i) and (ii), while whilst in contact with each other, have been subjected to conditions which cause cross-linking of polymers at the interface between them~~
20 ~~reaction, preferably by subjecting the layers to radiation, particularly more preferably ionising radiation. The sufficient to increase cross-linking is preferably such that at least one of the following conditions is fulfilled~~

(a) ~~the peel bond strength between the said layers, measured by ASTM 81876- 95, is to at least 5N, preferably more than 10N,~~
25 (b) ~~when a sample of the insulated electrical wire 60 mm long is immersed to a depth of 42 mm in a bath of acetone at 23 °C for 1 hour, there is no delamination of the two layers, and~~
(c) ~~the peel bond strength between the layers after the crosslinking, measured by ASTM B1876-95, is preferably increasing the bond strength by at least 50%, more~~
30 ~~preferably by at least 100%, especially by at least 500% or 1000%, compared to that~~

~~between the uncross-linked layers~~ greater than the peel bond strength between the layers before the crosslinking, measured by ASTM B1876-95.

26. Please cancel the amendment requested in paragraph 11 of the previous Reply.

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27. Please cancel the amendment requested in paragraph 14 of the previous Reply.

28. Please cancel the amendment requested in paragraph 16 of the previous Reply.

10 29. Please replace the paragraph beginning on page 4, line 10 (page 4, line 12, of the published PCT specification) with the words "The polyolefin-based layer ..." and ending on page 4, line 13 (page 4, line 15 of published PCT specification), with the words "... properties to the polymer.", with the following amended paragraph.

15 Each of the layers (i) and (ii) optionally contains, in The polyolefin-based layer (i) in addition to the polymeric component portion of the formulation, for which the requirements are stipulated above, may contain whatever else is required in the way of additives such as anti-oxidants, pigments, fillers, flame retardants, etc, to enhance as known per se, to give the required mechanical, thermal, electrical etc. properties of the insulation to the polymer.

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30. Please cancel the amendment requested in paragraph 19 of the previous Reply.

31. Please replace the paragraph beginning on page 4, line 30 (page 5, line 1, of the published PCT specification) with the words "The bond strength described..." and ending on page 5, line 15 (page 5, line 19, of published PCT specification), with the words "... under a microscope.", with the following amended paragraph.

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~~The bond strength described in this application can be measured in terms of peel strength between bonded strips of the two materials in question. A standard method which can be used for such a test is ASTM 1876-95. By this definition, a significant bond could be one for which the peel force exceeds 5N, and a strong bond one of peel force greater than 10N. A convenient~~

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method for gauging the bond strength between the layers ~~said layers~~, (i) and (ii), when they have been fabricated onto a wire, is to immerse ~~place~~ a sample wire, of total length 60mm, ~~into~~ in a bath of acetone (e.g. Fisher Scientific UK, AR certified grade acetone), to a depth of 42 mm ~~acetone equivalent to 70% of the length of sample wire~~, at 23 (+/- 3)°C, for a period of 1 hour.

- 5 Wires with negligible bonding of the insulation layers experience an extension of the outer layer ~~PVDF~~ PJ, along the axis of the wire, that is independent of any extension of the inner layer ~~polyolefin core~~, and/or wrinkling of the outer layer PJ such that it delaminates from the inner layer ~~core~~ in places. When it occurs, the above-mentioned extension of the outer layer PJ typically results in a PJ “tube” extending for 1mm or more beyond the cut end of the inner layer ~~core in the sample wire, following the above test~~.
- 10 Wires with significantly bonded insulation layers experience an extension of both layers ~~the core and PJ, together~~, without separation, beyond the cut edge of the conductor, along the axis of the wire and/or wrinkling of the two ~~core and PJ~~ core and PJ layers together, without delamination. Any such wrinkling of the two layers ~~core and PJ~~ together can be distinguished from wrinkling only of the outer layer PJ ~~only~~ by examining a
- 15 cross-section of the wrinkles under a microscope.